

Work Order ID 134268***134268***

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Wednesday, July 08, 2015 3:06:08 PM

Item ID: D412-742-043 Accept ***N900040100*** Setup Start ***NS1***
Revision ID: Stop ***NS2***
Item Name: Repl. Skidtube Fits LH or RH, High Gear, DART (Apical) Tri-Bag Float Comp.
Start Date: 6/29/15 Start Qty: 1.00 ***1*** Cust Item ID:
Required Date: 7/07/15 Req'd Qty: 1.00 ***1*** Customer:
Reference:

Approvals: Process Plan: MCS Date: JUL 09 2015 Tooling: _____ Date: _____
QC: _____ Date: _____ SPC (Y/N): _____ Date: _____
Run Start ***NR1***
Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
Draw Nbr	Revision Nbr								
D3391	I								
100	Document Control	0.00							
100	DOCUMENT CONTROL								
DC	Memo	0.00							
Doc.Control -USB or Paperwork	If D412-742-043 is a W/O on it's own, Photocopy bluefile and create labels per PPP D412-742-043 CHG005								

N/A MCS AUG 17 2015

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐					
Date :		Step #:		QTY Effective :			MRB (QSI042) Approval		
Description Work Order Deviation				Disposition				Completed By	
								Lead hand / Supervisor Approval Verification	
								QC / QA Coordinator Approval	
Root Cause		FAULT CATEGORY							
Environment ☐	No Re-verification ☐	Pressure/Forced ☐	Temperature/Cure ☐	Power Loss/Surge ☐	Positioned Wrong ☐				
Design ☐	Operator ☐	Bending ☐	Set-up ☐	Folio/Program ☐	Outside Dimensions ☐				
Doc/Data ☐	Offset/Setup ☐	Centre Not Concentric ☐	BOM/Route ☐	Grain ☐	Over/Under tolerance ☐				
Equip/Tooling ☐	Supplier ☐	Cracks ☐	Broken/Damage/Defect ☐	Weld ☐	Part Incorrect ☐				
Handling/Pre ☐	Training ☐	Crimp/Kink/Ripple/Wave ☐	Inspection Incomplete/Unqualified ☐	Wrong Stock Pulled ☐	Part Lost/Missing ☐				
Material ☐	Use for Testing ☐	Cuffs ☐	Contamination ☐	Out of Sequence ☐	Part Moved ☐				
Internal Transport ☐	Poor Information ☐	Crushing ☐	Countersink ☐	Off-set ☐	Drawing ☐				
Tribal Knowledge ☐	Rushing ☐	Heat Treat ☐	Cut Too Short ☐	Mislabeled ☐	Finish ☐				
LOA ☐	Product Improvement ☐	Wave/Twist in Tube ☐	Instructions Incomplete/Unclear ☐	Fit/Function ☐	Misread ☐				
Substation ☐	Process Improvement ☐	Marks/Chatter ☐	Drill Holes ☐	Misaligned/off center ☐	Turning Sequence ☐				
Past Expiry Date ☐	Manufacturing Process ☐	OTHER : _____							
Misidentified ☐	Past Due ☐								

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Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____ Run Start ***NR1***
QC: _____ Date: _____ SPC (Y/N): _____ Date: _____ Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
110		0.00							
110	HandFinishing								
HandFinish	Memo	0.00							
Hand Finishing	1-Install tubes together and seal them all the way around using Sikaflex 241/291. Ensure tube ends line-up with saddle holes for proper alignment. using 7/16" "T" Pins. A/RSikaflex-241/-291 Expiry date:								
	2-Install wearplates as per Dwg D3391. Ensure that plastic washers are against wearplate, then topped with the SS washer. Seal all bolts with sikaflex exept ones with inserts on inside of tube ,hand tighten only bolts with no sikaflex.								
	A/RSikaflex-241/-291 Expiry date:								
	3-Remove "T" pins once sikaflex is dry.								
	4-Coat all exposed hardware with LPS Procyon. Remove any excess off with MEK degreaser. A/RLPS Procyon								

Handwritten signature and date: 12/6/15

DQA: _____ Date: _____



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Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐																																																													
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Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
120 *120* QC Quality Control	QC5- Inspect part completeness to step on W/O Memo	0.00 0.00				1			DAS 38 9-89 JUL 23 2015
130 *130* Packaging Packaging	Packaging Memo Identify and pack for shipping as per PPP D412-742-043 Location: _____ PPP Rev: _____	0.00 0.00							AUG 17 2015 1 DAS 6 9-89
140 *140* QC Quality Control	QC21- Final Inspection - Work Order Release Memo	0.00 0.00							MLS AUG 17 2015

MLS AUG 17 2015

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D412-742-043

Required Date: 7/07/15

Required Qty: 1.00

Comments:

IPP Rev A	05.10.13	New Issue	KJ/JLM	
IPP Rev	06.02.13	ECN 773 dwg @ rev.D	EC	
IPP Rev:C	07-05-28	As per Rev F	JLM	
IPP Rev:D	07-12-04	ECN 1072	DD verified by:JLM	
IPP Rev:E	08-09-08	ecn 08-510	DD verified by:EC	IPP Rev:F
11.11.01	as per DSI9517	REV.B	DD verified by:EC	

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
D3391-021		Manufactured	No				Each	0.0000		1			
D3391-021 Fwd Tube Assembly													
D3391-023		Manufactured	No			110	Each	0.0000	1	1			
D3391-023 Mid Tube Assembly													
D3391-025		Manufactured	No			110	Each	1.0000	1	1			
D3391-025 Aft Tube Assembly													
Location Loc Qty Loc Code													
FG 1													
112712 1													
AN3C4A		Purchased	No			110	Each	1,507.000	24	24			
AN3C4A Bolt													
Location Loc Qty Loc Code													
FG 20													
122814 20													
FP001 987													
M132551 987													
ST350 500													
M132317 500													

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Past Expiry Date	☐	Manufacturing Process	☐	OTHER :																					
Misidentified	☐	Past Due	☐																						

Picklist Print

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Work Order ID: 134268

134268

Parent Item: D412-742-043

D412-742-043

Parent Item Name: Repl. Skidtube Fits LH or RH, High Gear, DART (Apical) Tri-Bag Float Comp.

Start Date: 6/29/15

Required Date: 7/07/15

Start Qty: 1.00

Required Qty: 1.00

AN3C6A Purchased No 110 Each 127.0000 10 10

AN3C6A

Bolt

**

15/07/22

Location

Loc Qty

Loc Code

CA	39	132767	Y10
m128704	39		
FG	10		
122416	10		
ST338a	78		
m128769	78		

AN3C7A Purchased No 110 Each 655.0000 4 4

AN3C7A

Bolt

**

15/07/22

Location

Loc Qty

Loc Code

FG	10		
122141	10		
FP001	56		
m125709	56		X4
ST349	589		
m125709	589		

NAS1149C0332R Purchased No 110 Each 4,325.000 38 38

NAS1149C0332R

WASHER

**

15/07/22

Location

Loc Qty

Loc Code

FP001	2140		
m130325	2140		
GA	265		
m131618	265		
ST271	1920		
m132262	1920		X38

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Start Date: 6/29/15

Required Date: 7/07/15

Start Qty: 1.00

Required Qty: 1.00

D4095-041 Manufactured No

110 Each 13.0000 1 1

D4095-041

Wearplate Fwd

all 15/07/22

Location

Loc Qty

Loc Code

FP002

13

125254

1

126328

7

127078

5

X

D4095-043 Manufactured No

110 Each 9.0000 1 1

D4095-043

Wearplate Aft

all 15/07/22

Location

Loc Qty

Loc Code

FP002

9

106976

2

113411

1

125283

2

126329

4

VI

D4095-045 Manufactured No

110 Each 11.0000 1 1

D4095-045

Wearplate Center

all 15/07/22

Location

Loc Qty

Loc Code

FP002

11

126330

1

131769

10

XI

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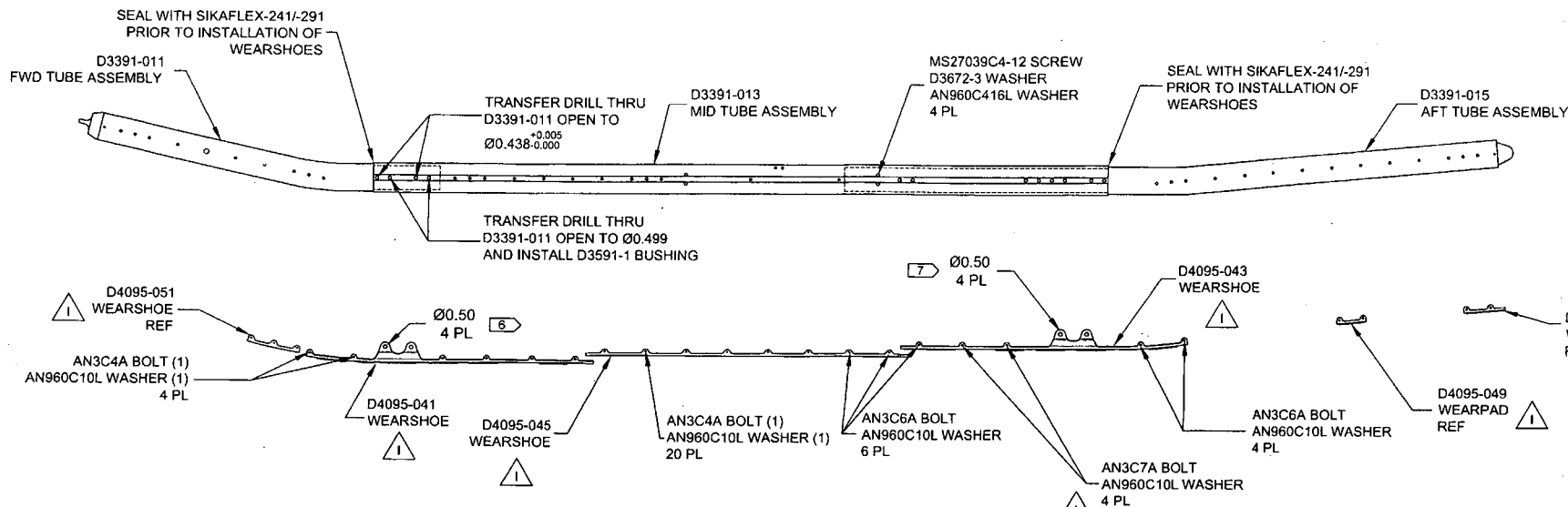
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Root Cause			FAULT CATEGORY		
Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐	No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐	Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐	Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐	Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Misabeled ☐ Fit/Function ☐ Misaligned/off center ☐	Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐
OTHER :					



D3391-041 FLOAT SKIDTUBE ASSEMBLY PARTS LIST

QTY	PART NUMBER	DESCRIPTION
X	D3391-041	FLOAT SKIDTUBE ASSEMBLY
1	D3391-011	FWD TUBE ASSEMBLY
1	D3391-013	MID TUBE ASSEMBLY
1	D3391-015	AFT TUBE ASSEMBLY
2	D3591-1	BUSHING
4	D3672-3	WASHER
1	D4095-041	WEARSHOE
1	D4095-043	WEARSHOE
1	D4095-045	WEARSHOE
1	D4095-047	WEARSHOE
1	D4095-049	WEARSHOE
1	D4095-051	WEARSHOE
24	AN3C4A	BOLT
10	AN3C6A	BOLT
4	AN3C7A	BOLT
38	AN960C10L	WASHER
4	MS27039C4-12	SCREW
4	AN960C416L	WASHER

- GENERAL NOTES**
- 1) FINISH: CHEMICAL CONVERSION COAT PER DART QSI 005 4.1
POWDER COAT WHITE (4.3.5.1) PER DART QSI 005 4.3
 - 2) COAT ALL EXPOSED FASTENERS WITH LPS LABORATORIES "LPS PROCYON"
AFTER FINAL ASSEMBLY, CLEAN EXCESS OFF POWDER COATING WITH MEK DEGREASER.
 - 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
 - 4) UNITS: INCHES UNLESS OTHERWISE NOTED
 - 5) USE DART DRILL TEMPLATE DT8217 TO LOCATE AND DRILL 0.297 SIZE HOLES
FOR WEARSHOE INSERTS. C'BORE AS NOTED AND INSTALL INSERTS EXCEPT
WHERE INDICATED.
 - 6) FIT D4095-041 TO SKIDTUBE WITH D2571 AND D2572 SADDLES INSTALLED WITH
APPROPRIATE HARDWARE AND SPACERS IN FORWARD AND AFT HOLES AND
TRANSFER DRILL 0.50 HOLES FROM SADDLE TO D4095-041
 - 7) FIT D4095-043 TO SKIDTUBE WITH D2571 AND D2572 SADDLES INSTALLED WITH
THE APPROPRIATE HARDWARE AND SPACERS IN FORWARD AND AFT HOLES AND
TRANSFER DRILL 0.50 HOLES FROM SADDLE TO D4095-043

SHOP COPY D3391-041 ASSEMBLY

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WITH THE

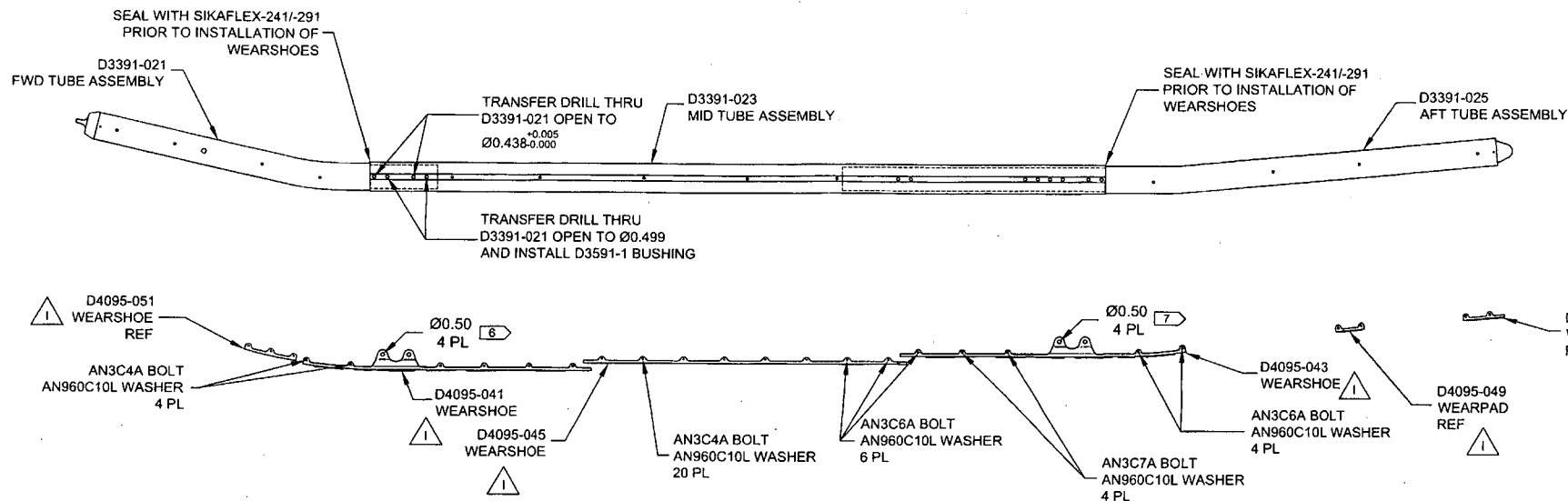
WORK ORDER

NO. 134268 MJS

15-07-09

RELEASED
2011-11-04
ECN# 11-662

I	REMOVE GASKETS AND REPLACE ALL WEARSHOES; PARTS LIST UPDATE, ZN A8-1, ZN A8-2, ZN A6-4, ZN B6-8; LPS-3 COATING REMOVED FROM NOTE 2, ZN A3-1, ZN A3-2, REMOVED INSERT AELS-1032-130, ZN B6-4, B2-4, C7-8, C3-8; REMOVED HOLES, ZN D6-4 ZN D2-4, ZN D7-8, ZN D3-8	XDF	11.10.13
H	DRAWING UPDATED TO CURRENT STANDARDS. SHT 1 PL ADDED D3591-1 BUSHING, ZN C6 0.438 DIM WAS 4 PL, ADDED 0.499 DIM AND D3591-1 BUSHING. SHT 2 PL ADDED D3591-1 BUSHING, ZN C6 0.438 DIM WAS 4 PL, ADDED 0.499 DIM AND D3591-1 BUSHING. (FOR FURTHER INFO SEE DSI 9364 & NCR 08-074)	AJS	08.08.20
G	REPLACE NAS INSERTS W/ AELS INSERTS SWITCH TO D3670-XXXX SPACERS FOR INSTALLING FLOAT BAGS, DWG REORGANIZED FOR CLARITY	DC	07.07.31
F	ADD SS WEARSHOE, GASKET REMOVE FWD SADDLE HOLE -011/-021	PH	07.01.18
E	CHANGE TOLERANCE, EASE MANUFACTURE	PH	06.04.25
D	UPDATE TOLERANCE, CHANGE HOLE SIZE	PH	06.01.23
C	LENGTHEN AFT EXTENSION	PH	05.09.27
B	DRAWING UPDATES	PH	05.06.10
A	NEW ISSUE	PH	05.02.07
REV.	DESCRIPTION	BY	DATE
DESIGN	PH	DART AEROSPACE USA, INC	
DRAWN	XDF	KENT, WA	
CHECKED		DRAWING NO.	REV. I
MFG. APPR.		D3391	SHEET 1 OF 8
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DE APPR.		412 FLOAT SKIDTUBE	NTS
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D3391-043 FLOAT SKIDTUBE ASSEMBLY PARTS LIST

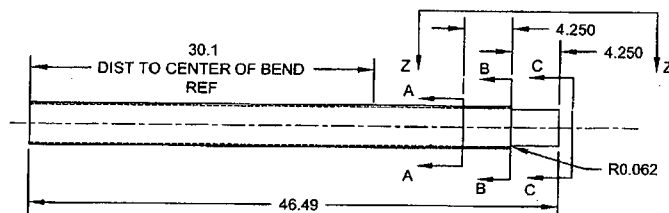
QTY -043	PART NUMBER	DESCRIPTION
X	D3391-043	FLOAT SKIDTUBE ASSEMBLY
1	D3391-021	FWD TUBE ASSEMBLY
1	D3391-023	MID TUBE ASSEMBLY
1	D3391-025	AFT TUBE ASSEMBLY
2	D3591-1	BUSHING
1	D4095-041	WEARSHOE
1	D4095-043	WEARSHOE
1	D4095-045	WEARSHOE
1	D4095-047	WEARSHOE
1	D4095-049	WEARSHOE
1	D4095-051	WEARSHOE
24	AN3C4A	BOLT
10	AN3C6A	BOLT
4	AN3C7A	BOLT
38	AN960C10L	WASHER

GENERAL NOTES

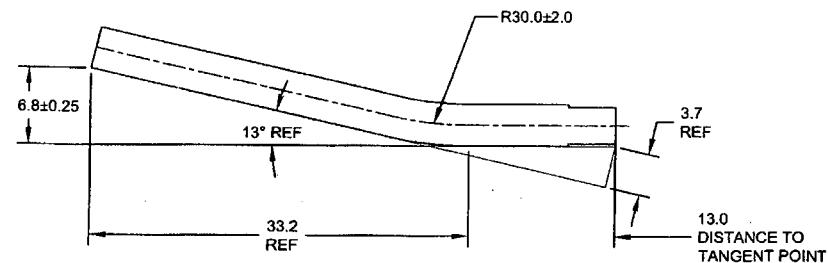
- 1) FINISH: CHEMICAL CONVERSION COAT PER DART QSI 005 4.1
POWDER COAT WHITE (4.3.5.1) PER DART QSI 005 4.3
- 2) COAT ALL EXPOSED FASTENERS WITH LPS LABORATORIES "LPS PROCYON"
AFTER FINAL ASSEMBLY, CLEAN EXCESS OFF POWDER COATING WITH MEK DEGREASER.
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) USE DART DRILL TEMPLATE DT8217 TO LOCATE AND DRILL Ø0.297 SIZE HOLES
FOR WEARSHOE INSERTS. C'BORE AS NOTED AND INSTALL INSERTS EXCEPT
WHERE INDICATED.
- 6) FIT D4095-041 TO SKIDTUBE WITH D2571 AND D2572 SADDLES INSTALLED WITH
APPROPRIATE HARDWARE AND SPACERS IN FORWARD AND AFT HOLES AND
TRANSFER DRILL Ø0.50 HOLES FROM SADDLE TO D4095-041
- 7) FIT D4095-043 TO SKIDTUBE WITH D2571 AND D2572 SADDLES INSTALLED WITH
THE APPROPRIATE HARDWARE AND SPACERS IN FORWARD AND AFT HOLES AND
TRANSFER DRILL Ø0.50 HOLES FROM SADDLE TO D4095-043

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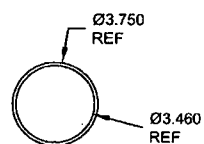
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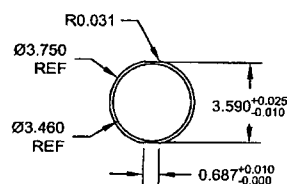
D3391-1 CUTTING DETAIL
(MAKE FROM D6013-047 SKIDTUBE MATERIAL)



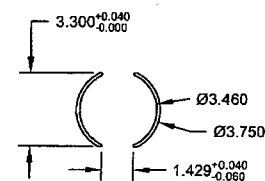
D3391-011/-021 BENDING DETAIL
(MAKE FROM D3391-1)



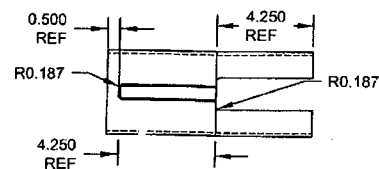
SECTION A-A
SCALE 2X



SECTION B-B
SCALE 2X



SECTION C-C
SCALE 2X

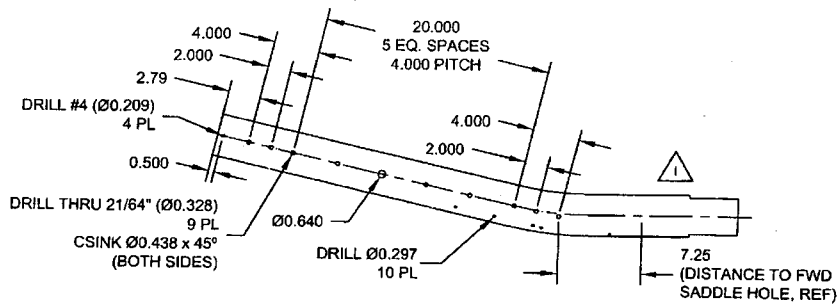


VIEW Z-Z
SCALE 2X

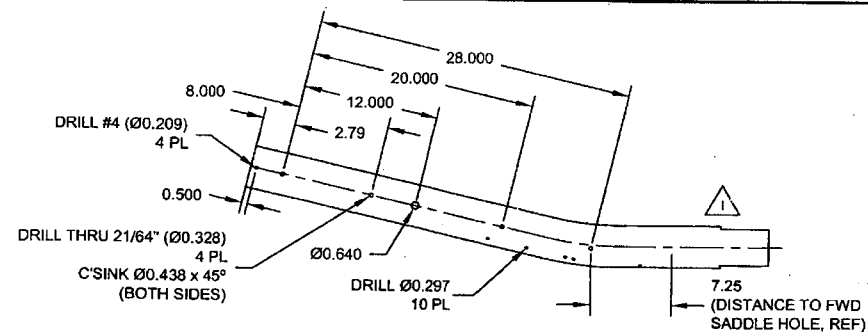
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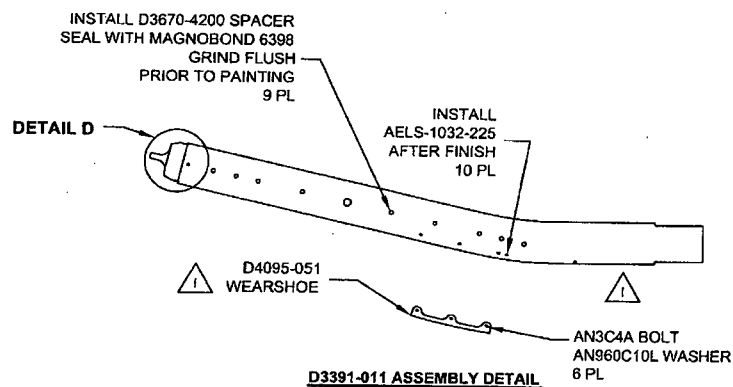
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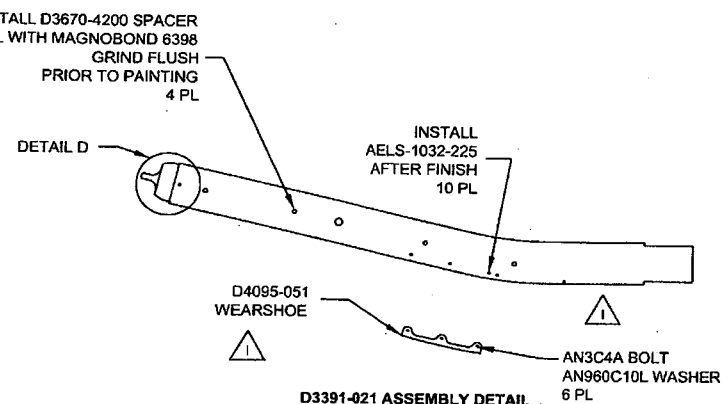
D3391-011 DRILLING DETAIL



D3391-021 DRILLING DETAIL



D3391-011 ASSEMBLY DETAIL

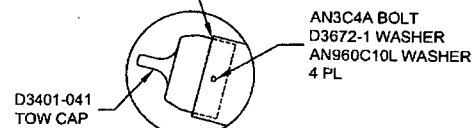


D3391-021 ASSEMBLY DETAIL

D3391-011/-021 FWD TUBE ASSEMBLY PARTS LIST

QTY - 011	QTY - 021	PART NUMBER	DESCRIPTION
X		D3391-011	FWD TUBE ASSEMBLY
	X	D3391-021	FWD TUBE ASSEMBLY
1	1	D3401-041	TOW CAP
9	4	D3670-4200	SPACER
4	4	D3672-1	WASHER
1	1	D4095-051	WEARSHOE
1	1	D6013-047	FWD TUBE
10	10	AN3C4A	BOLT
10	10	AN960C10L	WASHER
10	10	AELS-1032-225	INSERT

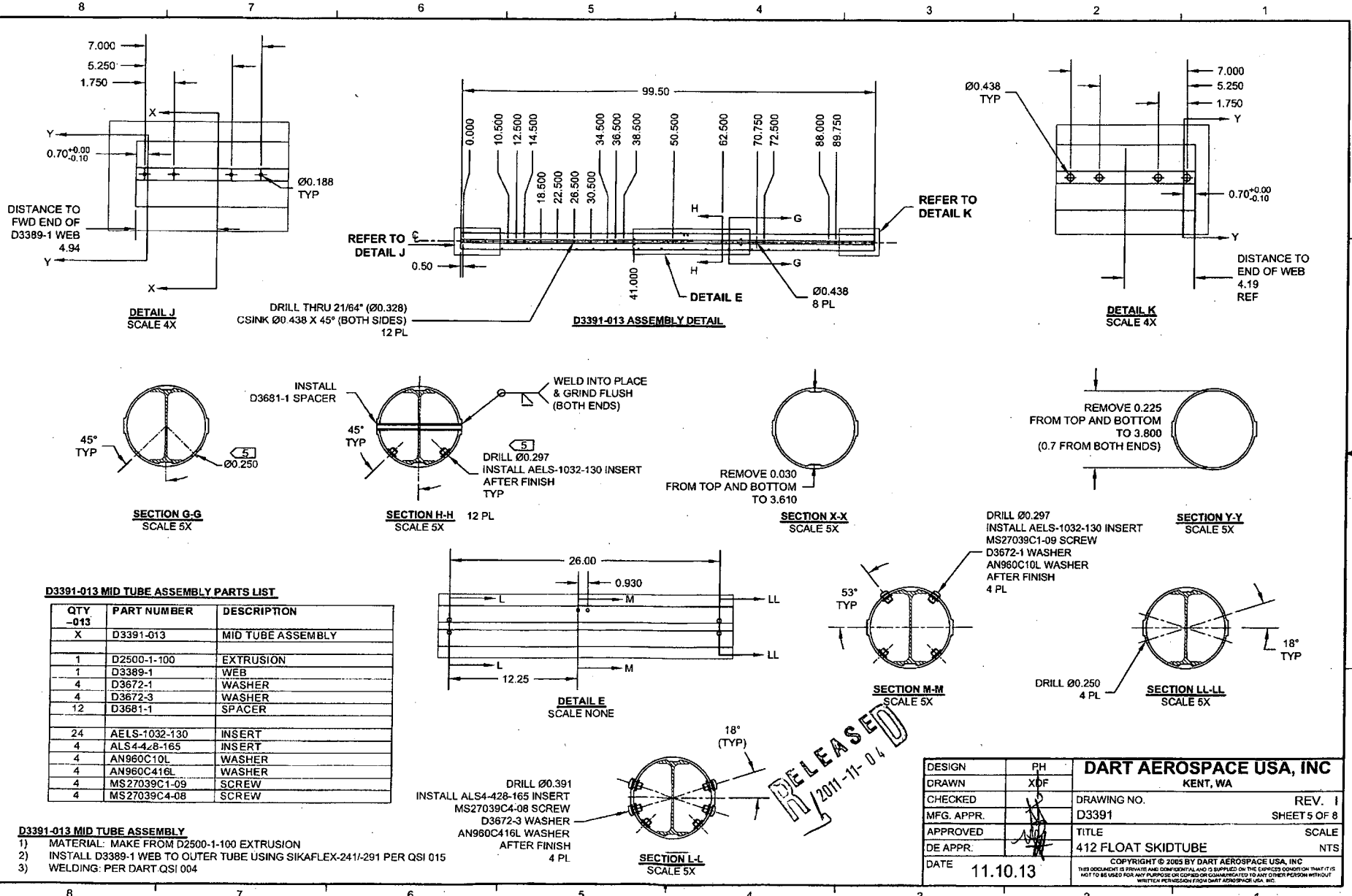
SEAL WITH
SIKAFLEX-241/-291



**DETAIL D
SCALE 2X**

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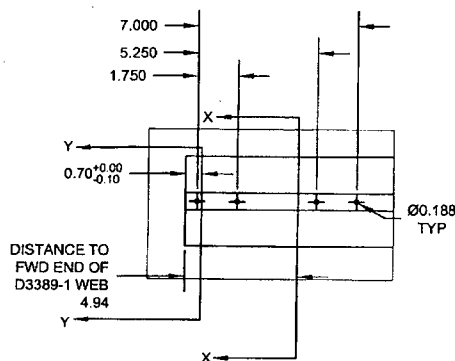
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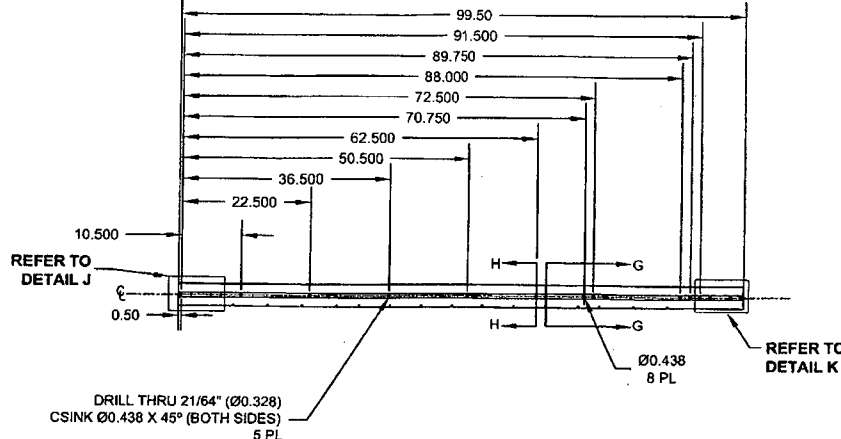
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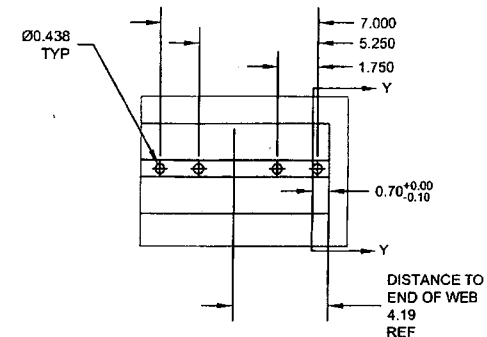
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DETAIL J
SCALE 4X



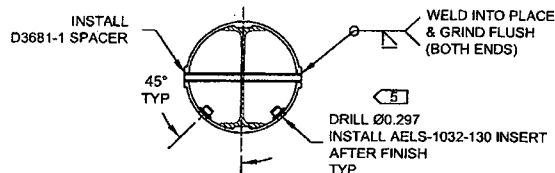
D3391-023 ASSEMBLY DETAIL



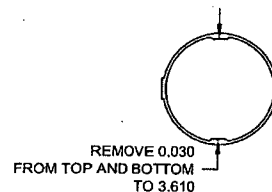
DETAIL K
SCALE 4X



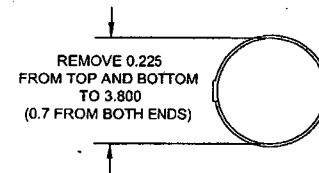
SECTION G-G
SCALE 5X



SECTION H-H
SCALE 5X



SECTION X-X
SCALE 5X



SECTION Y-Y
SCALE 5X

D3391-023 MID TUBE ASSEMBLY PARTS LIST

QTY - 023	PART NUMBER	DESCRIPTION
X	D3391-023	MID TUBE ASSEMBLY
1	D2500-1-100	EXTRUSION
1	D3389-1	WEB
5	D3681-1	SPACER
20	AELS-1032-130	INSERT

D3391-023 MID TUBE ASSEMBLY

- 1) MATERIAL: MAKE FROM D2500-1-100 EXTRUSION
- 2) INSTALL D3389-1 WEB TO OUTER TUBE USING SIKAFLEX-241/-291 PER QSI 015
- 3) WELDING: PER DART QSI 004

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